UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,944	02/25/2004	Zhitai Sun	1341.1190	9464

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EXAMINER
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ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>25 February 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-11</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-11</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>25 February 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☒ Some *   c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☒ Certified copies of the priority documents have been received in Application No. <u>JP2003-301573</u>.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/25/2004 and 03/20/2007</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-11 are pending for examination.

Specification

2.   The disclosure is objected to because it contains an embedded hyperlink and/or other

form of browser-executable code (page 1, line 25). Applicant is required to delete the embedded

hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Applicant is required to review the content of the specification of any minor mistakes.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new
> and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4.   Claims 1-9 and 11 are rejected under 35 U.S.C. 101 because the claims are directed to non-

statutory subject matter.

5.   As per claim 1 and 9, the claimed computer program and apparatus are software per se, as they

are not tangibly embodied on any sort of physical medium. The claims limitation is described as

being software in the specification at page 3 lines 6-9 and page 20 lines 12-16.

6.   Claims 2-8 and 11 are rejected for similar reasons as discussed for their respective parent claims,

as they fail to present any limitation that resolve the deficiency of the parent claim from they

depend.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

   a.   The following terms lacks antecedent basis:

      i.   The process – claim 5.

      ii.   The current process- claim 6

      iii.   The primary priority- claim 9, 10.

   b.   The claim language in the following claims is not clearly understood:

      iv.   As per claim 1, lines 5, it is unclear what is meant by "a non-idle process". Is it a process that has been waiting for resources or is it a process that has been ready for execution but did not get the chance to run. It is not clearly understood whether it is active or non active process. Furthermore, it is unclear how the determination is being done.

      Line 6, it is unclear what is meant by "<u>executable</u> processes <u>to be</u> executed". Are they processes ready to be executed.

      Line 8, it is unclear what is meant by "a set priority". How many type of priority are there? Does each type have different priority? Furthermore, how many operating systems are there?

Line 9, it is unclear what is meant by "an operating system task". It is not clearly understood whether is a task that is ready to run or is it an executable process. Furthermore, it is unclear the relationship between "operating system task" and the "non-idle process".

v.   As per claim 4, line 5, it is unclear whether "a schedule request" for the executable process or the non-idle process.

vi.   As per claim 5, line 9, "PCB of the process", it is unclear which process is referred to here, is it the non idle process or the executable processes.

vii.   As per claim 6, line 14, it is unclear what is the relation between "the current process", the non idle process and the executable processes.

viii.   As per claim 7, line 19, it is not clearly understood what is meant by "a global area of the operating system".

ix.   As per claim 8, it is unclear what does the primary priority belong to? Does it belong to the operating system task or the non-idle process?

x.   As per claim 9, it has the same deficiency as claim 1.Furthermore, line 8, it is not clearly understood whether "an executable non-idle process" is the same as "a non idle process" of line 11 (if it is the same, it should be referred to as said executable non- idle process).

xi.   As per claim 10, it has the same deficiency as claim 1. Furthermore, line 16, it is not clearly understood whether "an executable non-idle process" is the same as "a non idle process" of line 13.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

10. Claims 1-4 and 7 -11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et

al. (Saito) (US 2005/0149933 A1), in view of Prasad et al. (Prasad) (US 2004/0117791 A1).

11. As per claim 1, Saito teaches the invention including a task control computer program

including computer executable instructions which when executed by a computer, cause the

computer to execute an operating system as a task by performing:

changing a set priority of the operating system to a higher priority higher than a

primary priority of an operating system task when it is determined at the determining that the

executable processes include the non-idle process (Abs, lines 2,3; abs, 12-15; Par. [0115];

12. Saito did not teach specifically determining whether a non-idle process is included in

executable processes to be executed under control of the operating system. However, Prasad

teaches determining whether a non-idle process is included in executable processes to be

executed under control of the operating system (Par. [0030], lines 14-24).

13. It would have been obvious to one of an ordinary skill in the art at the time the invention was

made to have combined the teaching of Saito and Prasad because Prasad 's teaching of

detecting the process that has been waiting to be executed would improve system

performance and stability of Saito's system by eliminating the queue latency.

14. As per claim 2, Saito teaches a system call that executes the determining and the changing

(Fig. 7, 184; Par. [0141], lines 1-6).

15. As per claim 3, Saito teaches changing the higher priority to the primary priority after the

operating system has been executed at the higher priority for a predetermined period of time

([0111]; [0112]; [0113]; [0115], lines 5-8).

16. As per claim 4, Saito teaches the invention including determining whether a schedule request

has been made to the operating system (Fig.9, 206, 207); and

determining whether an interruption request has been made to the operating system (Fig.

12, 241,242).

17. Saito did not teach specifically determining whether a non-idle process is executable under

the control of the operating system. However, Prasad teaches the invention including

determining whether a non-idle process is executable under the control of the operating

system (Par. [0030], lines 14-24).

18. As per claim 7, Saito teaches that the determining whether an interruption request has been made to the operating system is based on an interruption request flag provided in a global area of the operating system (Fig.3, 141; Fig. 21, 177).

19. As per claim 8, Saito teaches the primary priority is changed to the higher priority when a predetermined period of time has elapsed after it is determined that there is an executable non-idle process (Par. [0115], lines 5-8).

20. As per claim 9, Saito teaches a task control apparatus for causing a computer to execute an operating system as a task, comprising:

a changing unit that changes a set priority of an operating system task to a priority higher than the primary priority of the operating system task when the determining unit determines that there is an executable non-idle process (Abs, lines 2- 3; abs, 12-15; Par. [0115].

21. Saito did not teach specifically a determining unit that determines whether a non-idle process is executable under control of the operating system. However, Prasad teaches a determining unit that determines whether a non-idle process is executable under control of the operating system (Par. [0030], lines 14-24).

22. As per claim 10, Saito teaches a task control method for causing a computer to execute an operating system as a task, comprising:

changing a set priority of an operating system task to a priority higher than the primary

priority of the operating system task when it is determined that there is an executable non-idle process (Abs, lines 2- 3; abs, 12-15; Par. [0115].

23. Saito did not teach specifically determining whether executable processes to be executed under control of the operating system include a non-idle process. However, Prasad teaches whether executable processes to be executed under control of the operating system include a non-idle process (Par. [0030], lines 14-24).

24. As per claim 11, Saito teaches changing the higher priority to the primary priority after the operating system has been executed at the higher priority for a predetermined period of time([0111]; [0112]; [0113]; [0115], lines 5-8).

25. Claim 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (Saito) (US 2005/0149933 A1), in view of Prasad et al. (Prasad) (US 2004/0117791 A1) and further in view of Herrington et al. (Herrington) (US 4,435,780) .

26. As per claim 5, the combined teaching of Saito and Prasad did not specifically teach that the determining whether the non-idle process is executable under the control of the operating system is based on a process identifier stored in a process control block (PCB) of the process.

27. However, Herrington teaches that the determining whether the non-idle process is executable under the control of the operating system is based on a process identifier stored in a process

control block (PCB) of the process (Fig. 5, 52; Col. 6, lines 7-9).

28. It would have been obvious to one of an ordinary skill in the art at the time the invention was

made to have combined the teaching of Saito, Prasad and Herrington because Herrington's

teaching of having the process ID stored in the PCB would improve process scheduling and

system management by identifying the process.

29. As per claim 6, Herrington teaches that the determining whether the schedule request has

been made to the operating system is based on a schedule request flag stored in a process

control block of the current process (Fig.5, 50).

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

(US 6108683 A) teach determining executing processes based upon changeable priorities.

(US 20030135319 A1) teach different interrupt mask return processes.

31. Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Caroline Arcos whose telephone number is 571-270-3151. The

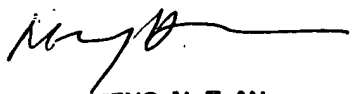examiner can normally be reached on Monday-Thursday 7:00 AM to 5:30 PM.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patent examiner
Caroline Arcos

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